

Review of the Southeastern Asian Sawfly Genus *Eusunoxa* Enslin (Hymenoptera: Tenthredinidae)

DAVID R. SMITH AND M. S. SAINI

(DRS) David R. Smith, Systematic Entomology Laboratory, PSI, Agricultural Research Service,
U.S. Department of Agriculture, % National Museum of Natural History,
Smithsonian Institution, Washington, DC 20560-0168, USA, email: dsmith@sel.barc.usda.gov;
(MSS) Department of Zoology, Punjabi University, Patiala, 147002 India
email: saini20@glide.net.in

Abstract.—Nine species of *Eusunoxa* Enslin are keyed, described, and illustrated: *E. buchi* Togashi from the Philippines; *E. ceylonica* Malaise from Sri Lanka and southern India; *E. formosana* Enslin from Taiwan; *E. ebena*, n. sp., from Indonesia (Kalimantan); and *E. nigriceps* (Rohwer), *E. auricauda*, n. sp., *E. lissofrons*, n. sp., *E. punctata*, n. sp., and *E. semipunctata*, n. sp., from southern India. *Eusunoxa* subg. *Asunoxa* Wei is a new synonym of *Eusunoxa* Enslin, and *Eusunoxa indiana* Haris is a new synonym of *E. ceylonica* Malaise.

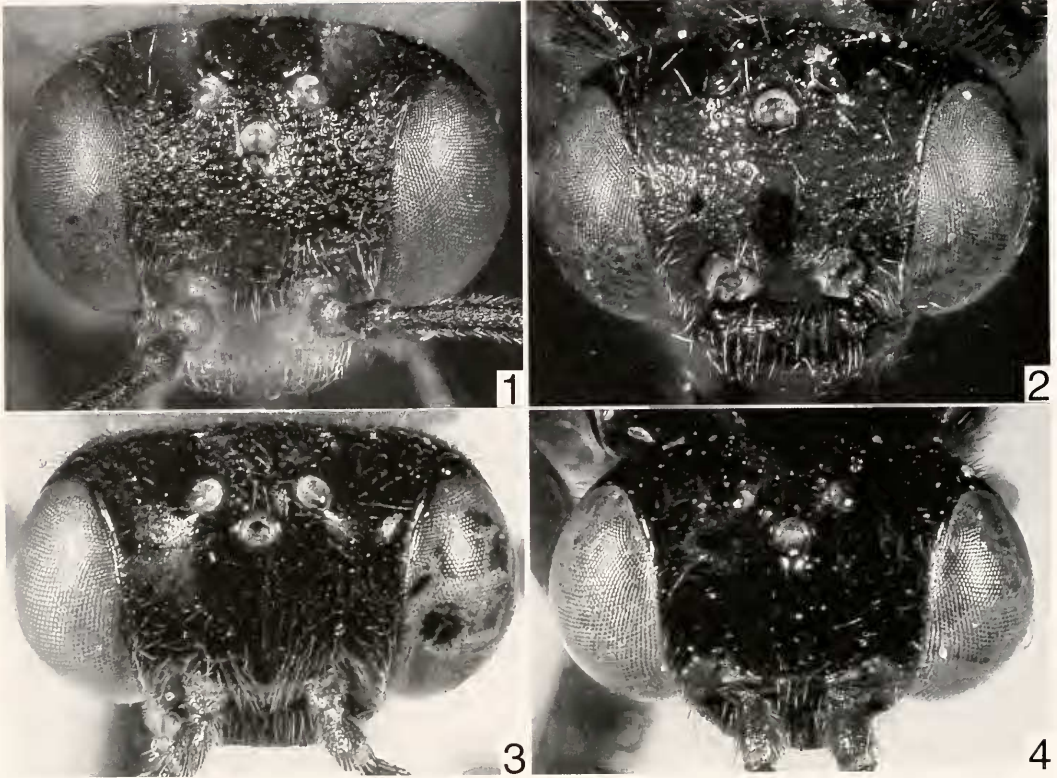
Eusunoxa Enslin, a small genus of the subfamily Allantinae, is known from India, Sri Lanka, Taiwan, Indonesia, and the Philippines. Malaise (1963) also mentioned Burma in the distribution of the genus, but we have not seen specimens from Burma, although one species was collected during extensive surveys of northeastern India by the junior author. Specimens are not common, but significant collections from southern India and Sri Lanka have prompted this review. We treat nine species, five of which are described as new. Food plants are not known.

Acronyms used are: BMNH = The Natural History Museum, London, UK; DEI = Deutsches Entomologisches Institut, Eberswalde, Germany; PUNJ = Punjabi University, Patiala, India; USNM = National Museum of Natural History, Smithsonian Institution, Washington, DC, USA. Abbreviations used are: OOL = distance between eye and hind ocellus; POL = distance between hind ocelli; OCL = distance between hind ocellus and posterior margin of head.

Eusunoxa Enslin

Eusunoxa Enslin 1911: 99. Type species: *Eusunoxa formosana* Enslin, by original designation.
Eusunoxa subg. *Asunoxa* Wei 1997: 88. Type species: *Eusunoxa ceylonica* Malaise, by original designation. **New synonymy.**

Description.—Antenna filiform, sometimes slightly incrassate in middle and flagellomeres slightly serrate, length $2\times$ or less head width; 1st and 2nd segments each longer than broad; 3rd segment subequal to or slightly longer than 4th; apical segments without ventral membranous areas. Head from above strongly narrowing behind eyes; postgenal carina absent; inner margins of eyes slightly converging downwards; clypeus subtruncate to very shallowly circularly emarginate (Fig. 2); labrum short, about $2\times$ broader than long; malar space linear or very narrow to slightly more than half diameter of front ocellus. Head with frontal area about same height as eyes; supraantennal tubercles and frontal ridges indistinct; median fovea a shallow groove; supraantennal pits distinct, about $2\times$ their di-



Figs. 1-4. Front view of head. 1, *Eusunoxa punctata*. 2, *E. semipunctata*. 3, *Eusunoxa ceylonica*. 4, *E. lissofrons*.

ameter from antennal socket and each with a small conical projection at center; lateral furrows deep and slightly diverging posteriorly; post-, inter-, and circumcellular furrows indistinct to absent. Epicnemium present as a flat sclerite separated from mesepisternum by a suture. Hind coxae lengthened, end of hind basitarsus reaching to and beyond apex of abdomen; hind basitarsus (Figs. 5-8) longer than length of remaining tarsal segments combined, broad and laterally flattened, with outer surface concave; tarsal pulvilli present only on segments 3 and 4. Tarsal claws with single inner tooth, slightly shorter than outer tooth, and positioned lateral to outer tooth; basal lobe present or absent. Hind wing with cell Rs absent, cell M present. Thorax and abdomen impunctate, shining.

Discussion.—The presence of an epicne-

mium, long hind legs with the hind basitarsus reaching to or beyond the apex of the abdomen, the large, laterally compressed hind basitarsus, and presence of one closed cell in the hind wing are distinctive for *Eusunoxa*. *Eusunoxa* may be separated from other Allantinae by Malaise's (1963) key. It is closest to *Megabeleses* Takeuchi, *Beleses* Cameron, and *Nesotaxonus* Rohwer, but *Megabeleses* has the inner tooth of the tarsal claws much longer than the apical one, much longer antennae (more than twice the head width), and the head from above slightly dilated behind the eyes. The other genera have a normal (cylindrical) hind basitarsus and have ventral membranous areas in the apical four antennal segments. The broad, laterally compressed hind basitarsus is reminiscent of the same in the Holarctic genus *Craesus* Leach (Nematinae).

Wei (1997) proposed the subgenus *Asunoxa* for those species lacking a basal lobe to the tarsal claws (Fig. 22). This included all known species except *E. formosana* Enslin, which has a basal lobe (Fig. 21) and was the only described species in the typical subgenus (Wei [1997] separated some unnamed species, designated as "*E. spp.*," and we add one, *E. ebena*, n. sp., here).

Other than the basal lobe, *E. formosana* shares all other characters with other species, including similarities in the genitalia, and shares the presence of punctures on the frons with some other species. Because the presence or absence of a basal lobe is of suspicious importance, we do not see the necessity of recognizing subgenera at present.

KEY TO SPECIES OF *EUSUNOXA*

- 1 Tarsal claws with basal lobe (Fig. 21); front of head with large, closely set punctures separated by narrow ridges, as in Fig. 1 2
- Tarsal claws without basal lobe (Fig. 22); punctures on front of head as above, widely spaced with broad, flat, shining interspaces (Fig. 2) or absent (Figs. 3, 4) 3
- 2 Head, thorax, and abdomen orange yellow; antenna black with basal segments orange; wings yellow hyaline, costa and subcosta yellowish, stigma brownish with margins yellowish; hind basitarsus 4.8× longer than maximum width (lancet in Fig. 9; male genitalia in Figs. 13, 14) *formosana* Enslin
- Head (except for reddish-brown clypeus), thorax and abdomen black; wings lightly blackish with costa, subcosta and stigma black; hind basitarsus 3.8× longer than maximum width *ebena*, n. sp.
- 3 Thorax black or black with pronotum, tegula, and part of meso- and metanotum dark orange 4
- Thorax entirely orange 7
- 4 Pronotum, tegula, V-shaped mark on mesoprescutum, mesoscutellum, and metanotum orange (head shining, impunctate, as in Fig. 4; male genitalia with penis valve curved, in Fig. 20) *nigriceps* (Rohwer) (♂)
- Thorax entirely black 5
- 5 Abdomen orange except for blackish basal plates (frons sparsely punctured, with shining interspaces, as in Fig. 2; male genitalia in Fig. 17) *auricauda*, n. sp.
- Abdomen black 6
- 6 Legs entirely black; head shining, impunctate (Fig. 4); penis valve oval (Fig. 19) *lissofrons*, n. sp.
- Legs with fore- and midtibiae and tarsi white; head with sparse, widely separated punctures with shining interspaces on frons (Fig. 2); penis valve elongate, constricted at center (Fig. 18) *semipunctata*, n. sp. (♂)
- 7 Clypeus and supraclypeal area dark orange; first antennal segment or basal 2 antennal segments and base of 3rd segment may be orange; head with frons densely punctate, punctures close together, separated by narrow ridges, without shining interspaces (Fig. 1) 8
- Head and antenna black; frons impunctate, shining, or with widely spaced punctures separated by broad, shining interspaces (Figs. 2-4) 9
- 8 Hind femur basally orange, apical half or more black; basal 2 antennal segments and base of 3rd segment orange; hind basitarsus about 1.4× length of remaining tarsal segments combined; Philippines *buchi* Togashi
- Hind femur entirely black; only 1st antennal segment dark orange; hind basitarsus about

- 1.7× length of remaining tarsal segments combined (Fig. 8) (lancet in Fig. 11); India
 **punctata, n. sp.**
- 9 Femora blackish, only extreme bases may be orange; frons with distinct, widely spaced
 punctures, separated by broad, shiny interspaces (Fig. 2) (lancet in Fig. 12)
 **semipunctata, n. sp. (♀)**
- Fore- and midfemora orange, hind femur entirely or partly black; frons with few minute
 punctures or impunctate, shining (Figs. 3, 4) 10
- 10 Most of hind femur black, only extreme base orange; extreme apices of fore- and midtibiae
 black (lancet in Fig. 10; male genitalia in Figs. 15, 16) **ceylonica Malaise**
 – Apical half of hind femur black; tibiae orange (after Rohwer 1915) ... **nigriceps (Rohwer) (♀)**

***Eusunoxa auricauda* Smith and Saini,
 new species
 (Fig. 17)**

Female.—Unknown.

Male.—Length, 6.5 mm. Antenna, head, and thorax black, abdomen orange with black basal plates, basal plates darkest black laterally. Legs with apices of coxae and trochanters on upper surfaces white; fore- and midlegs with apices of femora and tibiae and tarsi entirely white; hind tibia black with white streak on inner surface of basal half. Wings lightly infumated towards apex; stigma, costa, and rest of venation dark brown to black. Antenna slightly compressed and flagellomeres serrate on underside with blunt projections on segments at apex below; length 2× head width; pedicel 2× its apical width; scape as long as its apical width; segment 3 slightly longer than segment 4. Clypeus with shallow V-shaped emargination; lower interocular distance 0.8× eye length; OOL:POL:OCL = 1.00:0.92:0.80; postocellar area subconvex, 3× broader than long at its maximum width; head with sparse, shallow punctures with flat shining interspaces on and around the frontal area (similar to Fig. 2), posterior orbits and postocellar area impunctate. Hind basitarsus 1.3× length of remaining tarsal segments combined, about 4.0× longer than maximum width. Tarsal claws without basal lobe. Genital capsule similar to Fig. 15; penis valve in Fig. 17.

Holotype.—♂, India, Kerala: Munar,

4000 ft., 22.9.1995, collection M.S. Saini (PUNJ).

Distribution.—India (Kerala).

Etymology.—The species name is based on the orange abdomen.

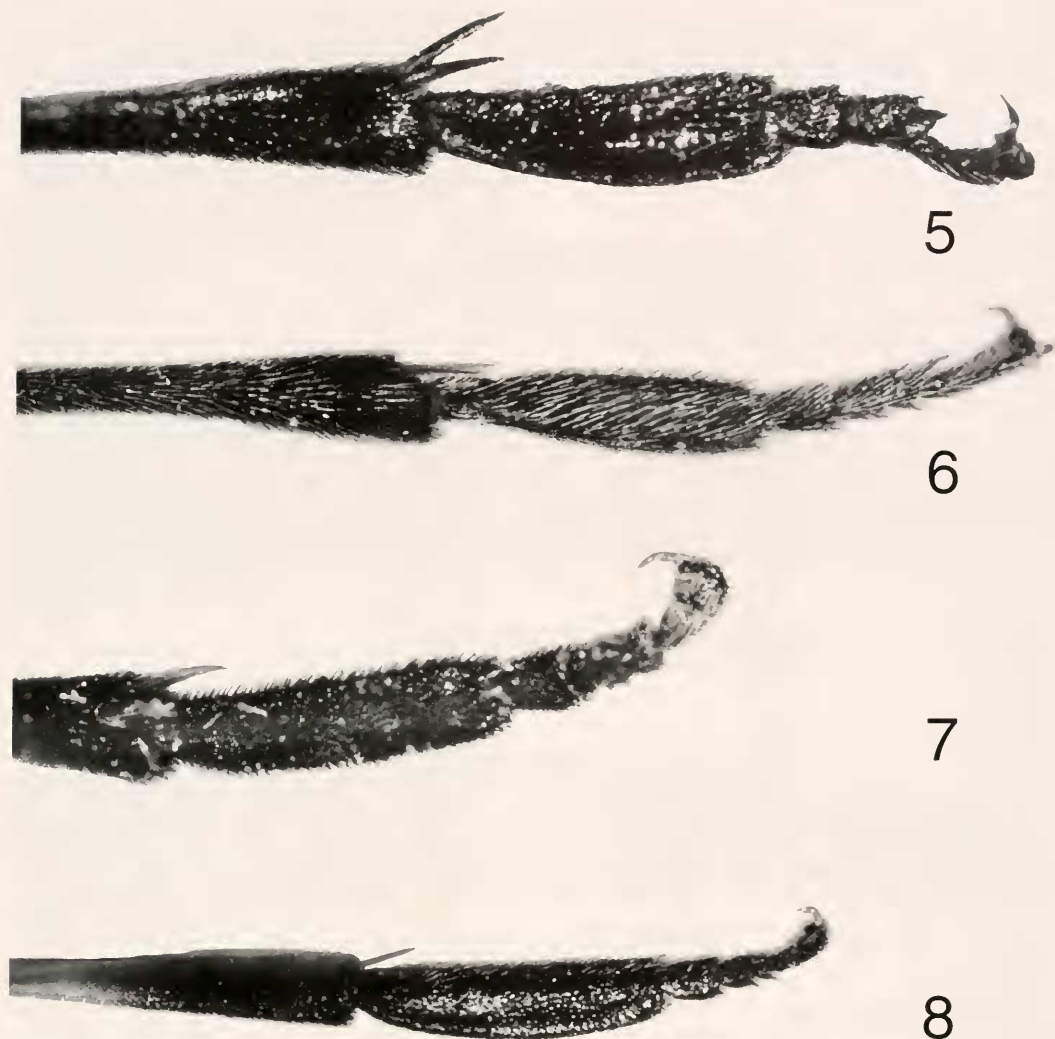
Remarks.—The black head and thorax with the contrasting orange abdomen are unlike other species of *Eusunoxa*. This coloration and the sparsely punctured head (similar to Fig. 2) will distinguish this species from other species in the genus. *Eusunoxa auricauda* is most similar to the male of *E. semipunctata*, with which it shares the punctate head, similar hind basitarsus, and very similar male genitalia (Figs. 17, 18). However, the absence of color variation in the large series of males of *E. semipunctata* and the slight difference in shape of the penis valve (less constricted at its center than that of *E. semipunctata*), provide evidence that *E. auricauda* is a separate species.

***Eusunoxa buchi* Togashi**

Eusunoxa buchi Togashi 1981: 419, figs. 21–24, 26–28.—Wei 1997: 89 (in subg. *Asunoxa*; in key).

Female.—Unknown.

Male.—Length, 6.0 mm. Antenna black with segments 1, 2, and basal half of 3rd segment orange. Head black with clypeus, mouthparts, and supraclypeal area orange. Thorax and abdomen orange. Fore- and midlegs orange with apical 4 tarsal segments infuscate; hind leg with coxa and trochanter orange, femur black except



Figs. 5–8. Apex of hind tibia and hind tarsus. 5, *Eusunoxa ceylonica*. 6, *E. lissofrons*. 7, *E. semipunctata*. 8, *E. punctata*.

basal quarter orange, tibia black with basal third white, and tarsus black. Wings very lightly, uniformly infuscated; veins and stigma black. Antennal length 1.7× head width; 3rd segment subequal in length to 4th. Lower interocular distance 0.7× eye length. Postocellar area 2.5× broader than long; clypeus subtruncate; malar space linear; OOL:POL:OCL = 1.00:0.80:0.80. Front of head densely punctate, punctures large and close together, separated by narrow ridges (similar to Fig. 1); postocellar and postocular areas nearly

impunctate, shining. Hind basitarsus 1.4× length of remaining tarsal segments combined, 4.2× longer than maximum width. Tarsal claws without basal lobe.

Types.—Holotype ♂, "Sept. 7, 1961, Mantalingajan, Pinigisan, 600 m, Palawan Is., Noona Dan Expedition," in Universitets Zoologiske Museum, Copenhagen, Denmark. Ten paratype males, dated Sept. 6–24, 1961, also in type series. None examined.

Specimen examined.—PHILIPPINES: Palawan, Mantalingajan, Pinigisan, 600 m, 23

Sept. 1961, Noona Dan Exp. 61–62 (1 ♂, BMNH). From same locality as type series.

Distribution.—Philippines (Palawan).

Remarks.—*Eusunoxa buchi* is the only species in the genus known from the Philippines. It shares the densely punctate head with *E. formosana*, *E. ebena*, and *E. punctata*. The mostly black coloration and lack of a basal lobe on the tarsal claws separate it from *E. formosana* and *E. ebena*, and the dark orange basal antennal segments and only the apical half of the hind femur black separate it from *E. punctata* from India, which has the hind femur black and only the first antennal segment dark orange.

Eusunoxa ceylonica Malaise

(Figs. 3, 5, 10, 15, 16, 22)

Netrocerus nigriceps Enderlein 1920: 371. Preoccupied in *Eusunoxa* by *Eusunoxa nigriceps* (Rohwer 1915).

Eusunoxa ceylonica Malaise 1932: 147.—Smith 1982: 120, figs. 2, 8, 14 (Sri Lankan records; female lancet, male genitalia, tarsal claw figured; syn.: *N. nigriceps* Enderlein).—Saini and Deep 1994: 50 (India, Tamil Nadu; as "*ceylonica*").—Wei 1997: 89 (in subg. *Asunoxa*; in key).

Eusunoxa indiana Haris 2000: 299. **New synonymy.**

Female.—Length, 6.5–7.5 mm. Antenna and head black; clypeus black to partially orange on side or anterior margins. Thorax and abdomen orange. Foreleg orange with extreme apex of tibia and apical 4 tarsal segments blackish; midleg orange with apical half of tibia and entire tarsus black; hind leg with coxa, trochanters, and basal third of femur orange, apical two-thirds of femur and entire tibia and tarsus black. Wings uniformly infuscated; veins and stigma black. Antennal length 1.7× head width, 3rd segment slightly longer than 4th. Lower interocular distance subequal to eye length; clypeus subtruncate; postocellar area 4.5× broader than long; malar space nearly linear; OOL:POL:OCL = 1.00:0.90:0.35. Head shining, impunctate

except for small widely scattered punctures on frontal area (Fig. 3). Hind basitarsus (Fig. 5) 1.5× length of remaining tarsal segments combined; about 3.6× longer than maximum width. Tarsal claws without basal lobe. Lancet in Fig. 10, with about 17 serrulae; apex roundly acute.

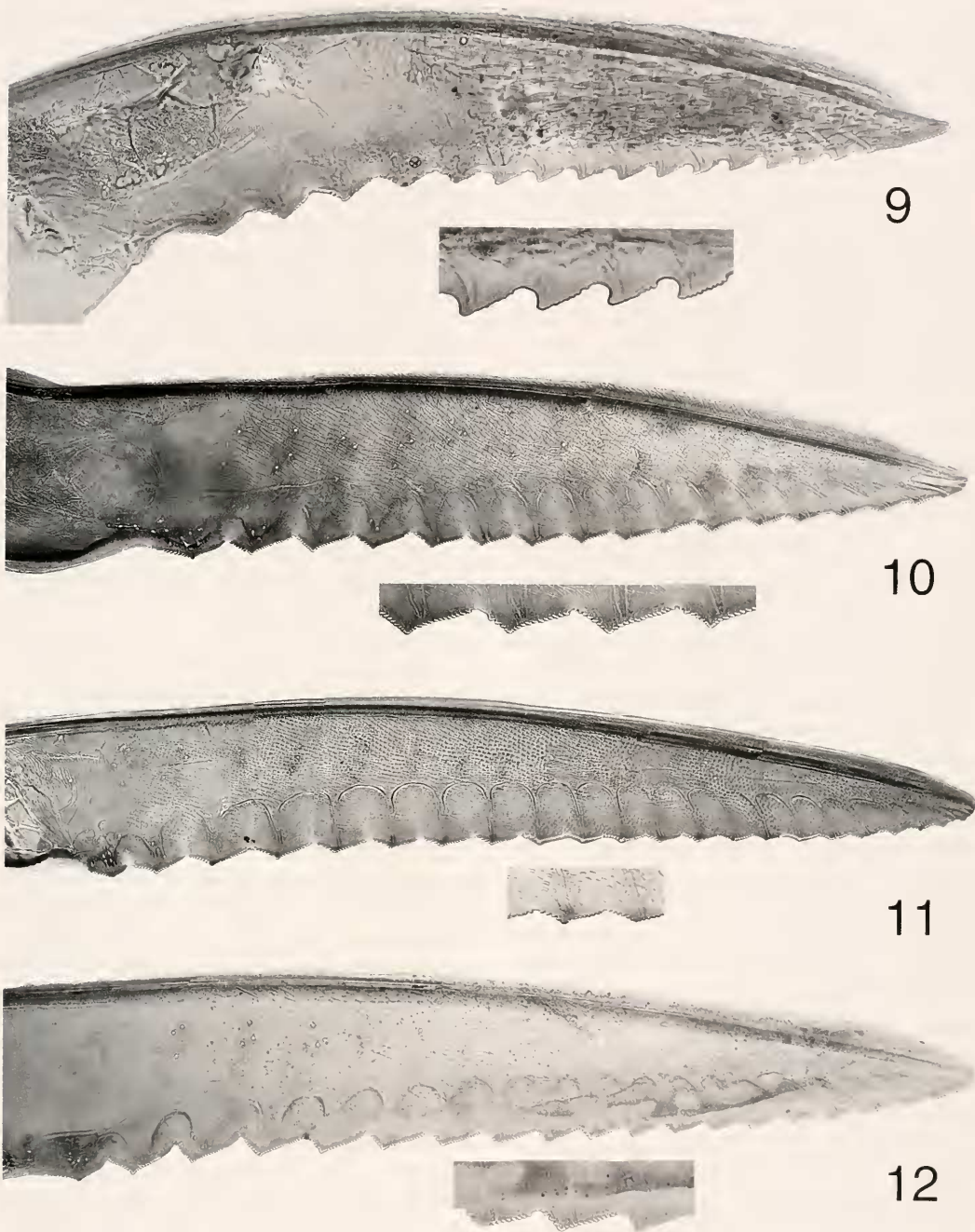
Male.—Length, 5.5–6.0 mm. Similar to female but with terga 2 to apex mostly infuscate to blackish and clypeus black or partly to almost entirely orange. Genitalia in Figs. 15, 16.

Types.—The holotype ♀ of *Netrocerus nigriceps* Enderlein, is in the Polish Academy of Sciences, Warsaw (examined). The holotype ♀ of *E. ceylonica* Malaise is in the BMNH, labeled "Colombo, Ceylon"; a paratype from the Swedish Museum of Natural History was examined. The holotype of *E. indiana* Haris is at the BMNH (examined), a ♂ labeled: "Holotype," "India, Tamil N., Madras, 2.XI.79. Boucek," "Holotype *Eusunoxa indiana* sp. n. det. A. Haris 1999," "B.M. type Hym. 1.851."

Specimens examined.—INDIA: Poonmudi, 18-9-95 (1 ♀); South India, Anamalai Hills, Cinchona, 3500 ft., V-1964, P.S. Nathan (2 ♀), V-1966 (2 ♀), X-1966 (1 ♀), V-1967 (1 ♀), V-1968 (1 ♀); Nilgiri Hills, Singara, S. India, 3400 ft., June 1954, col: P.S. Nathan (1 ♀); South India, Kerala State, Trivandrum Dt., Poonmudi Range, May 1971, 3000 ft. elevation, T.R.S. Nathan (2 ♀); South India, Pondicherry State, Karikal, P.S. Nathan (1 ♀), same but with date, X-'62 (1 ♀). SRI LANKA: Western Province, Central Province, Southern Province, Eastern Province, North Western Province, Northern Province (see Smith 1982 for records); Ceylon, Trincomalee (1 ♀, BMNH).

Distribution.—India (Kerala; Tamil Nadu); Sri Lanka.

Remarks.—*Eusunoxa indiana* Haris is the male of *E. ceylonica*. It is typical except for the orange clypeus. We have not seen other specimens with an entirely orange clypeus; however, among the material we examined, coloration varies from black to



Figs. 9–12. Female lancets. 9, *Eusunoxa formosana*. 10, *E. ceylonica*. 11, *E. punctata*. 12, *E. semipunctata*.

brownish, to some partially orange at the base and laterally.

The specimen from Ceylon at BMNH is like *E. ceylonica*, but the head (off the spec-

imen and glued on cardboard on the same pin) is more punctate than most specimens.

We have not seen variation in color of

the thorax and abdomen, both are mostly orange, with the abdomen of the male more blackish dorsally. *Eusumoxa ceylonica* appears to be most similar to *E. nigriceps*, both sharing the shining head with few widely spaced punctures, and the female is difficult to distinguish from that of *E. nigriceps* based on Rohwer's (1915) description of the latter. The male paratype of *E. nigriceps*, however, is mostly black, and the genitalia differ (Figs. 16, 20) from that of *E. ceylonica*.

In Sri Lanka, this species occurs in both open and wooded areas in dry and wet zones with annual rainfall ranging from 660 to 1952 mm (Smith 1982).

Eusumoxa ebena Smith and Saini,
new species

Female.—Length, 8.0 mm. Antenna black with segments 1, 2, and basal half of 3 dark orange; head black with clypeus reddish brown. Thorax and abdomen black. Foreleg dark brown with coxa and apical 3 tarsal segments black; midleg with coxa black, femur and tibia dark brown (tarsus missing); hind leg black with basal half of tibia white (apical two tarsal segments missing). Wings very lightly, uniformly infuscated; veins and stigma black. Antennal length $1.6\times$ head width, 3rd segment $1.1\times$ longer than 4th. Lower interocular distance $0.8\times$ eye length; clypeus very shallowly circularly emarginated; postocellar area $2.7\times$ broader than long; malar space distinct, slightly more than half diameter of front ocellus; OOL:POL:OCL = 1.0:1.2:1.0. Head with frontal area densely punctured, punctures deep, close together, separated by narrow ridges (similar to Fig. 1); clypeus impunctate, shining; postocellar area and head behind eyes sparsely punctate, shining. Hind basitarsus extremely flat and concave; $3.8\times$ longer than maximum width (length to remaining tarsal segments unknown since apical tarsal segments missing). Tarsal claws with basal lobe (Fig. 21).

Male.—Unknown.

Holotype.—♀, "Borneo, Pontianak, F. Muir" (BMNH).

Distribution.—In present-day Kalimantan, Indonesia.

Etymology.—The name is based on the almost entirely black coloration of this species.

Remarks.—*Eusumoxa ebena* and *E. formosana* are the only species that have a basal lobe on the tarsal claws. Also, both share the densely punctate frons. The coloration of the two are, however, entirely different. *Eusumoxa ebena* is almost entirely black and *E. formosana* almost entirely orange yellow. The hindbasitarsus is extremely flat, thin, and concave on its outer surface, similar to that of *E. formosana*. Because of the fragility of the specimen, the lancet was not examined; however, from the small apical part visible the serrulae appear to be rather deep similar to *E. formosana* (Fig. 9).

Eusumoxa formosana Enslin
(Figs. 9, 13, 14, 21)

Eusumoxa formosana Enslin 1911: 99.—Wei 1997: 88 (in subg. *Eusumoxa*; in key).

Female.—Length, 7.5–8.0 mm. Antenna, head, thorax, and abdomen yellowish orange, with antennal segments 5–9, apical third to half of hind femur, and most of hind tarsus black; apical segments of hind tarsus paler, more dark orange. Wings yellow hyaline, costa and subcosta yellowish, stigma brownish with margins yellowish, rest of venation dark brown. Antenna filiform, very slightly incrassate in middle; antennal length $1.7\times$ head width; 3rd segment $1.1\times$ length of 4th; pedicel as long as its apical width; scape slightly longer than its apical width. Clypeus subtruncate; malar space distinct but much less than half diameter of front ocellus; lower interocular distance $0.8\times$ eye length. OOL:POL:OCL = 1.00:1.00:0.83, postocellar area convex, $2\times$ broader than long at its maximum breadth. Head with frons densely punctured, punctures deep,

close together, separated by narrow ridges (similar to Fig. 1); postocellar area and head behind eyes sparsely punctate, shining. Tarsal claws with inner tooth shorter than apical one, basal lobe distinct (Fig. 21). Hind basitarsus extremely flat and concave on its outer surface, $1.7\times$ length of remaining tarsal segments combined; $4.8\times$ longer than maximum width. Lancet in Fig. 9, serrulae deep with almost perpendicular anterior margin.

Male.—Length, 7.5 mm. Similar in color and structure to female. Genitalia in Figs. 13, 14.

Type.—Described from a female from "Formosa," in the Zoologisches Staatssammlung, München, Germany; not examined.

Specimens examined.—TAIWAN: Taihorin, Formosa, H. Sauter, 7.VI.1911 (1 ♀, USNM); Kankau (Koshun) Formosa, H. Sauter, VI-1912 (1 ♀, USNM), same except VII-1912 (1 ♀, DEI); PingTung Co., Kenting Bot. Garden, subtropical forest, July 10–14, 1980, 260 m, D.R. Davis (1 ♂, USNM); Formosa, Sauter, Taihorinaho, 1090.VIII (1 ♀, BMNH).

Distribution.—Taiwan.

Remarks.—We did not examine the type since the description and uniqueness of this species is sufficient for its identity. This and *E. ebena* are the only species of *Eusunoxa* with a basal lobe on the tarsal claws and one of the few species (other than *E. ebena*, *E. punctata* and *E. buchii*) with a densely punctate frons. The almost entirely orange coloration is also distinctive. The female ovipositor, especially the shape of the serrulae (Fig. 9), differs from other species of *Eusunoxa*. Male genitalia (Figs. 13, 14) differ from other species by the longer parapenis of the genital capsule.

***Eusunoxa lissofrons* Smith and Saini,
new species
(Figs. 4, 6, 19)**

Female.—Unknown.

Male.—Length, 5.5–6.0 mm. Head and

thorax black, abdomen and fore- and mid-legs brownish, hind leg black. Wings infumated apically from base of stigma, basal half clear; venation dark brown to black. Antennal length $1.7\times$ head width, slightly compressed and only feebly incrassate in middle; pedicel $2\times$ longer than its apical width; scape as long as broad at apex; 3rd segment $1.1\times$ longer than 4th. Clypeus subtruncate; lower interocular distance $0.9\times$ eye length; malar space distinct but much less than half diameter of front ocellus; OOL:OCL:POL = 1.00:1.00:0.70; postocellar area convex, $2.8\times$ broader than long. Head (Fig. 4), thorax, and abdomen smooth, impunctate, with polished surface. Hind basitarsus about $1.2\times$ length of remaining tarsal segments combined, about $4.0\times$ longer than maximum width. Tarsal claws without basal lobe. Genital capsule similar to Fig. 15, penis valve in Fig. 19.

Holotype.—♂, "South India, Anamalia [Anamalai ?] Hills, Cinchona, 3500 ft., V-1965, P.S. Nathan" (USNM).

Paratypes.—INDIA: Same data as holotype (1 ♂, USNM), same except V-1964 (1 ♂, USNM), X-1967 (2 ♂, USNM); Coimbatore, S. India, 9.7.1949, P. Susai Nathan (1 ♂, USNM); Kerala: Permade, Parryar, 3500 ft., 21-9-1995, coll. M.S. Saini (1 ♂, PUNJ).

Distribution.—India (Kerala, Tamil Nadu).

Etymology.—The species name is based on the shining, impunctate frons.

Remarks.—The impunctate, shining frons is similar to that of *E. ceylonica* and *E. nigriceps*, but the entirely black coloration precludes the association of *E. lissofrons* because color variation has not been observed in males of those species. The male of *E. nigriceps* has the thorax partly orange, and the male of *E. ceylonica* has the thorax and abdomen mostly orange, unlike the entirely black thorax and abdomen of *E. lissofrons*. The male penis valve of *E. lissofrons* (Fig. 19) is oval and similar to that of *E. ceylonica* (Fig. 16); it is less

similar to the curved valve of *E. nigriceps* (Fig. 20). There is no indication that *E. lissofrons* is a color variant, but, if so, it could be one of *E. ceylonica*.

***Eusumoxa nigriceps* (Rohwer)**
(Fig. 20)

Beleses nigriceps Rohwer 1915: 51.

Eusumoxa nigriceps: Smith 1982: 120.—Wei 1997: 89 (in subg. *Asunoxa*; in key).

Female.—From Rohwer (1915). "Length, 6 mm." "Head and posterior femora beyond middle, four posterior tarsi and the antennae black, the rest of the insect rufous." "Wings distinctly hyaline, venation dark brown." "Clypeus truncate, surface coarsely, irregularly punctured;" "front and posterior orbits shining, impunctate;" "flagellum gradually thickened until it reaches the apex of the second joint;" "the fourth and following joints compressed; thorax shining, impunctate."

Male (paratype).—Length, 6.2 mm. Antenna and head black. Thorax blackish with tegula, pronotum, V-shaped mark on mesoprescutum, mesoscutellum, and metanotum dark orange. Abdomen mostly black. Foreleg orange with tarsus black; midleg with coxa, trochanter, and femur orange, tibia and tarsus black; hind leg with coxa, trochanter, and basal third of femur orange, apical two-thirds of femur and entire tibia and tarsus black. Wings lightly, uniformly infuscated; veins and stigma black. Antennal length $1.7 \times$ head width; 3rd segment about $1.1 \times$ length of 4th. Lower interocular distance $0.8 \times$ eye length; postocellar area $2.6 \times$ broader than long; clypeus subtruncate; malar space linear; OOL:POL:OCL = 1.00:1.00:0.74. Head shining, impunctate with very few punctures between antennae and eyes (similar to Fig. 4). Hind basitarsus $1.5 \times$ length of remaining tarsal segments combined, about $2.5 \times$ longer than maximum width. Tarsal claws without basal lobe. Genital capsule similar to Fig. 15; penis valve in Fig. 20, markedly curved in lateral view.

Types.—"Described from one female from Marikuppam, . . . 3,500 feet" and from "two males, one allotype, from Bangalore, . . . 3,000 feet" (South India). Type and allotype in the Indian Museum, as stated by Rohwer (1915), but we could not locate them and they are apparently no longer in existence. One paratype male is in the USNM, labeled "Ind. Mus., Bangalore, S. India, ca. 3000 ft., 12-X-10, Annandale," "U.S.N.M. Paratype No. 18909."

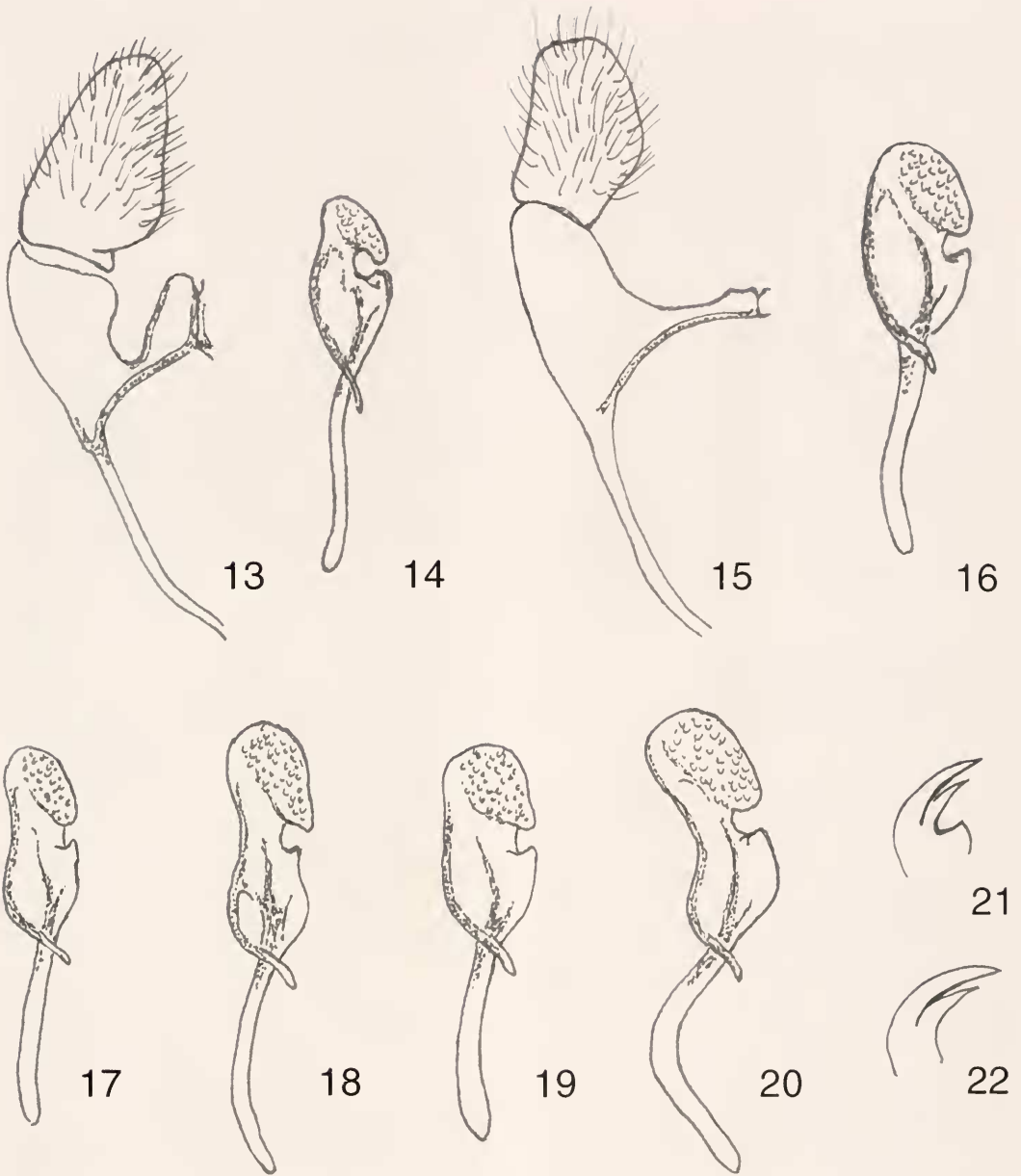
Distribution.—India (Karnataka).

Remarks.—Rohwer mentioned claws cleft, with the inner teeth exceeding the outer. Because the teeth are lateral and the paratype examined has the inner tooth shorter, Rohwer probably meant the outer tooth is longer.

Because we could not examine the holotype female, we assume Rohwer's association of sexes was correct. The description of the female is based on Rohwer's (1915) original description. It is very similar to the female of *E. ceylonica* and, so far as we can determine, can only be separated by the orange coloration of the tibiae and hind femur (see preceding key). Separation of *E. nigriceps* is based on the paratype male which, unlike most species and shared only by *E. lissofrons* and *E. ceylonica*, has the head shining and impunctate. However, the male of *E. lissofrons* is entirely black, and the male of *E. ceylonica* has the thorax and abdomen almost entirely orange. The shape of the male penis valve (Fig. 20) is markedly different from those species, and it is based on this feature that we believe *E. nigriceps* is a valid species and not a color variation of the others. We have not seen specimens that match Rohwer's description of the female or the paratype male examined. Thus, we keep *E. nigriceps* a separate species until more material is available for evaluation of its status.

***Eusumoxa punctata* Smith and Saini,**
new species
(Figs. 1, 8, 11)

Female.—Length, 8.2 mm. Head and antenna black with 1st antennal segment,



Figs. 13–22. 13–20, Male genitalia. 13, Genital capsule, ventral view of left half, of *Eusuoixa formosana*. 14, Penis valve, lateral, of *E. formosana*. 15, Genital capsule, ventral view of left half, of *E. ceylonica*. 16, Penis valve of *E. ceylonica*. 17, Penis valve of *E. auricauda*. 18, Penis valve of *E. semipunctata*. 19, Penis valve of *E. lissofrons*. 20, Penis valve of *E. nigriceps*. 21–22, Tarsal claws. 21, *E. formosana*. 22, *E. ceylonica*.

area below antenna, clypeus, labrum, mouthparts, mandible except tip, and very dim spots lateral to lateral furrows dark orange. Thorax and abdomen orange, except tergites 2–7 dark brownish at center.

Legs orange with midtarsus, apical two-thirds of hind femur, apical half of hind tibia, and entire hind tarsus black. Wings hyaline, infumated on apical half; stigma and costa brownish, rest of venation dark

brown to black. Antenna subincrassinated in middle, antennal length $1.7\times$ head width; pedicel $2\times$ its apical width; scape as long as its apical width; 3rd and 4th antennal segments subequal in length. Clypeus truncate; lower interocular distance subequal to eye length; malar space distinct but much less than half diameter of front ocellus; OOL:POL:OCL = 1.00:0.96:0.96; postocellar area subconvex, $2.4\times$ broader than long. Frons densely punctate, punctures large and close together, separated by narrow ridges (Fig. 1); hind orbits and postocellar area less punctured, shining. Hind basitarsus (Fig. 8) $1.7\times$ length of remaining tarsal segments combined; $3.7\times$ longer than its maximum width. Tarsal claws without basal lobe. Lancet as in Fig. 11, with about 21 serrulae.

Male.—Unknown.

Holotype.—♀, Nagaland: Chuchuyinlong, 2800 ft., 9.5.1994, collection M.S. Saini (PUNJ).

Distribution.—India (Nagaland).

Etymology.—The species name is based on the densely punctate frons.

Remarks.—In *E. punctata*, the hind basitarsus is unusually long in comparison to the length of the remaining tarsal segments, and the frons is densely punctate, both character states of which are shared only with *E. formosana* and *E. ebena*. *Eusunoza formosana*, however, is almost entirely orange yellow and both *E. formosana* and *E. ebena* have a basal lobe on the tarsal claws. The shape of the serrulae of the lancets of *E. punctata* and *E. formosana* also differ (Fig. 9, 11). The only other species with a densely punctate frons and absence of a basal lobe on the tarsal claws is *E. buchi* from the Philippines. However, *E. buchi* has a shorter hind basitarsus, only about $1.4\times$ the length of the remaining tarsal segments combined, and the basal two and basal half of the third antennal segments are dark orange.

Eusunoza semipunctata
Smith and Saini, new species
(Figs. 2, 7, 12, 18)

Female.—Length, 7.2–8.0 mm. Antenna and head black. Thorax and abdomen orange, upper half of mesepisternum somewhat more whitish than orange. Legs with coxae blackish except apices, trochanters white, femora blackish except extreme bases orange, fore- and midtibiae and fore- and midtarsi white with apical 3–4 tarsal segments infuscated to black. Wings lightly infumated apically from base of stigma, basal halves clear, venation dark brown to black. Antenna subincrassinated in middle, antennal length $1.8\times$ head width; pedicel and scape each $2\times$ longer than their apical widths; 3rd segment very slightly longer than 4th. Clypeus subtruncate; lower interocular distance subequal to eye length; malar space nearly linear; OOL:POL:OCL = 1.00:0.80:0.68; postocellar area subconvex, $2.9\times$ broader than long. Frons with distinct but sparse, widely separated punctures with broad, shiny interspaces between them (Fig. 2). Hind basitarsus (Fig. 7) $1.3\times$ length of remaining tarsal segments combined; $3.9\times$ longer than maximum width. Tarsal claws without basal lobe. Lancet as in Fig. 12, with about 20–21 serrulae.

Male.—Length, 6.5–7.0 mm. Antenna, head, and thorax black. Color of legs similar to that of female. Structure similar to that of female. Genital capsule similar to Fig. 15, penis valve in Fig. 18.

Holotype.—♀, "South India, Madras State. Anamalai Hills, Kadamparai, 3500', V-'63, P.S. Nathan" (USNM).

Paratypes.—INDIA: Same data as holotype (12 ♀, 43 ♂); Nilgiri Hills, Naduvattam, S. India, 6000 ft., May 1958, P.S. Nathan (1 ♂); South India, Anamalai Hills, Cinchona, 3500 ft., IV-1969, P.S. Nathan (6 ♂); V-1964 (4 ♂); V-1965 (4 ♀, 1 ♂); V-1966 (3 ♂); V-1967 (4 ♀, 2 ♂); IV-1969 (1 ♂); V-1968 (2 ♀, 2 ♂); V-1969 (2 ♀, 2 ♂); IX-1969, T.R.S. Nathan (1 ♂); Poomundi, 1550 m,

Kerala, India, 19-9-95 (1 ♂) (all USNM); Kerala: Poonmundi Hills, 4800 ft., 18.5.1995, collection M.S. Saini (1 ♂, PUNJ).

Distribution.—India (Kerala).

Etymology.—The name is based on the presence of widely spaced punctures on the frons.

Remarks.—Association of sexes is based on series taken at the same localities and at the same time. Only the coloration of the thorax and abdomen differs; the males black and the females orange. Such color dimorphism is not unusual in sawflies, and *E. nigriceps* apparently also shows color dimorphism. However, males of *E. ceylonica* and *E. formosana* are similar in color to the females. Both sexes of *E. semipunctata* have the distinct but widely spaced punctures on the frons with shining interspaces (as in Fig. 2). The female is separated from those of other species of *Euximoxa* by the mostly black femora, and the male by the mostly black legs with the fore- and midtibiae and tarsi white. The punctuation of the head also separates the female; no other species with an orange thorax and abdomen have such dense punctures. The male is similar to *E. auricauda*, but the abdomen of *E. auricauda* is orange (see remarks under that species).

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